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(54) Electret

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(57) Claims

1. An electret made of a copolymer comprised of 4-methyl-1-pentene and C6 - C18 α -olefin.

2. The electret of claim 1 wherein the content of the said α -olefin is 0.3 - 20 mol%.

Detailed Explanation of the Invention

This invention pertains to electret comprised of a specific 4-methyl-1-pentene copolymer.

Electrets are applied for acoustic elements such as microphones, speakers, and cartridges, and application is extended to measuring elements, noncontact switches, air filters, and memory elements. Recently, polymer electrets are used in the medical field.

Examples of these components are: magnesium oxide, magnesium hydroxide, talc, barium sulfate, gypsum, calcium carbonate, magnesium carbonate, clay, silica, titanium, mica, glass powder, glass fiber, etc.

In this case, known electret processes may be used.

The electret of this invention may be formed into fibers, films, tubes, and porous films and can be suitably used for acoustic elements, filters, and memory elements.

The invention is further explained with examples.

Comparative Example 1

A 50 μ thick T-die film was formed from high density polyethylene (HDPE) with a melt flow index (MI) of 0.9, and density of 0.954 g/cm².

The film was placed between electrodes, and DC -10 KV was applied, heated for 2 minutes at 120°C, cooled to room temperature, and charge was discontinued.

The surface potential of the electret was -1800 V. When the surface potential was checked again after being stored at 20°C and 60 - 70 %RH for 7 days, the value was near 0.

The surface potential was checked by a rotating center type surface voltmeter.

Comparative Example 2

A 50 μ thick T-die film was formed from isotactic polypropylene (PP) with MI of 7, and density of 0.91 g/cm³.

The film was processed as above, and the surface potential was checked. The results are shown in table 1.